

ORDER NO.KM60002615C7

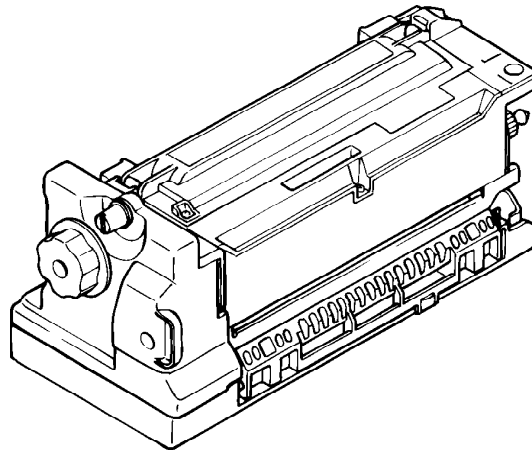
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# Service Manual

Fuser Unit



KX-PFSUB



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## WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

# Panasonic

## 1. Safety Precautions

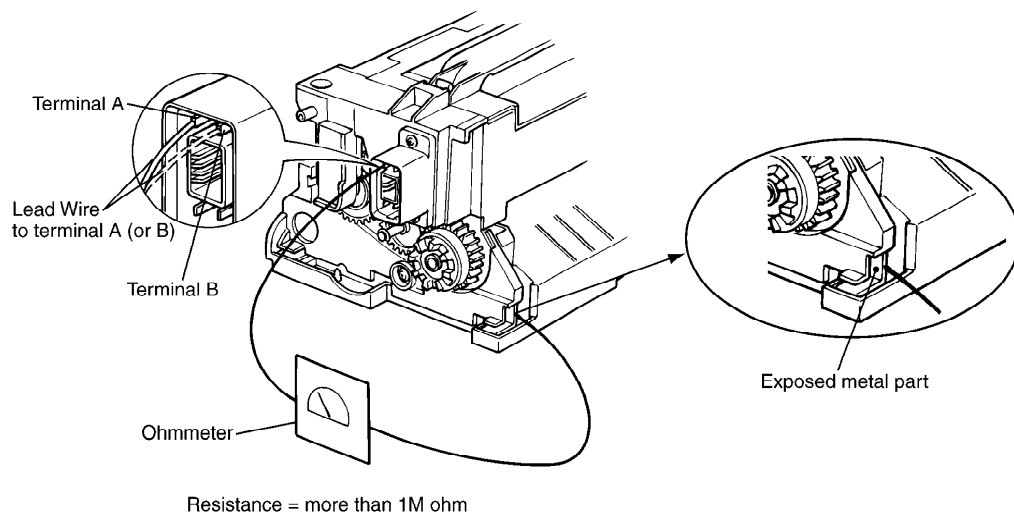
### **Safety Precautions:**

1. The fuser is hot. To avoid personal injury, wait 1 hour for the fuser to cool after turning the power off, and then handle and service it.
2. When replacing parts, use only the manufacturer's specified components.
3. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
4. Before returning the serviced equipment to the customer, be sure to perform the following section 2. "Insulation Resistance Test" to prevent the customer from being exposed to shock hazards.

## **2. Insulation Resistance Test**

1. Measure the resistance value with an ohmmeter between the terminal A ( or B ) and exposed metal cabinet part as shown below.
2. If the measurement is lower than the specified limits, there is a possibility of a shock hazard.

The equipment should be repaired and rechecked before it is returned to the customer.



## **3. Disassembly**

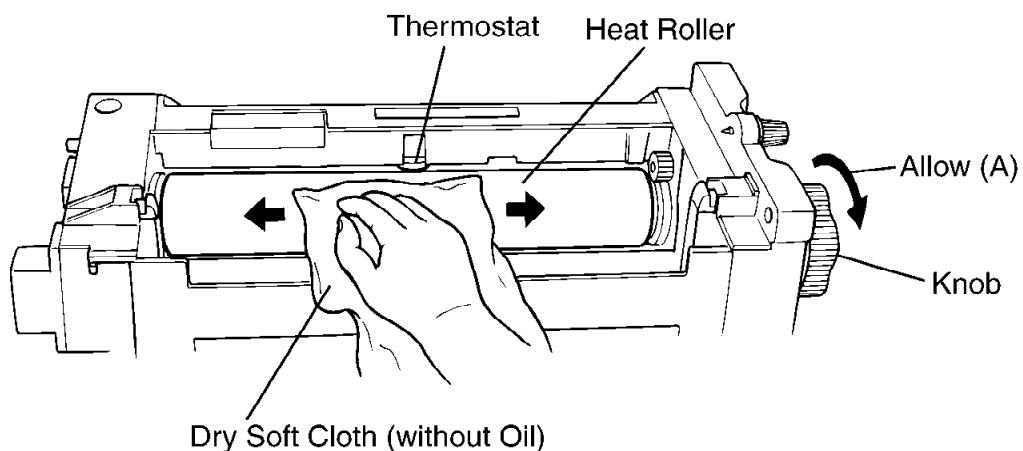
### **Caution:**

The fuser is hot. To avoid personal injury, wait 1 hour for the fuser to cool after turning the power off, and then handle it.

### **3.1. Heat Roller Cleaning ( before disassembling the fuser )**

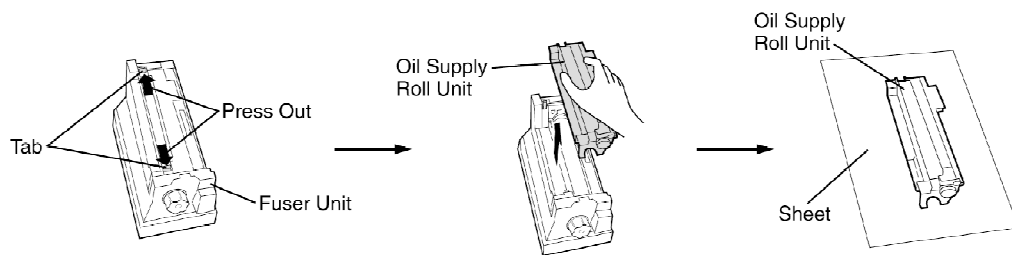
If the poor print quality ( repeated spots or lines, dark vertical line, dirty background, partial black dots, etc. ) is occurred in the print, first clean the surface of the heat roller with the soft cloth by the following steps before disassembling the fuser unit, and then recheck the print quality. The print quality may be corrected.

1. Remove the oil supply roll unit ( see section 3.2 **Removal of Oil Supply Roll Unit and Cleaning Pad.** )
2. Carefully clean the surface of the heat roller using a dry soft cloth while rotating the knob in the arrow direction as shown below. Do not rotate in the reverse direction, or the surface of the heat roller may be damaged by the thermistor.
3. Reinstall the oil supply roll unit on the fuser unit.
4. Apply the oil on the surface of the heat roller by rotating the knob a few turns in the Allow (A) direction as shown below.
5. Remove the oil supply roll unit again and check the heat roller whether the oil is applied on the surface of the heat roller.
6. Reinstall the fuser unit into the printer.
7. Reprint and recheck the print.

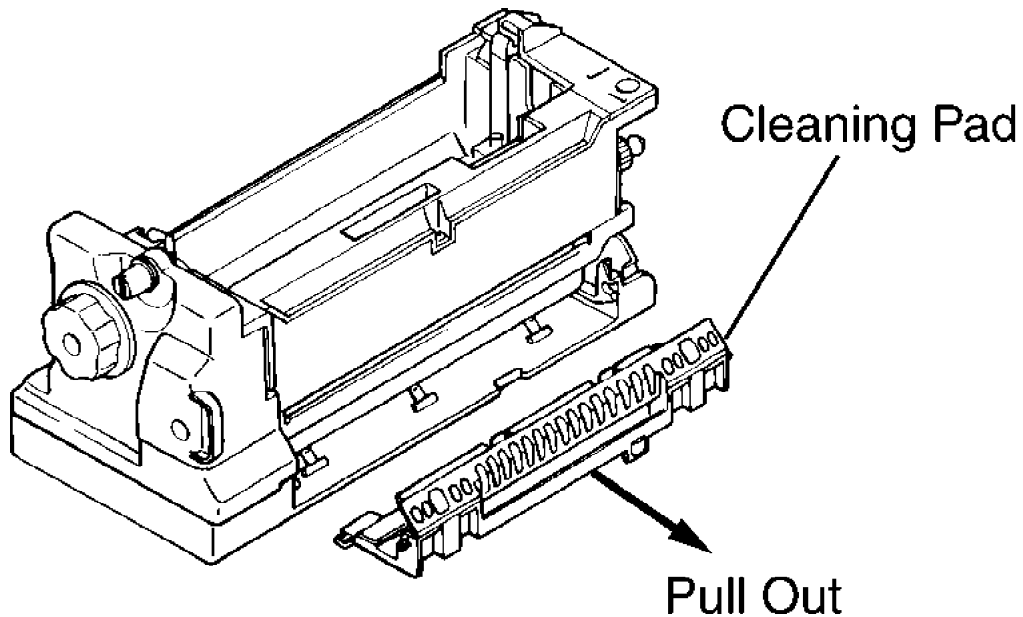


### **3.2. Removal of Oil Supply Roll Unit and Cleaning Pad**

1. Remove the oil supply roll unit by pressing on the tabs to unlock the oil supply roll unit.
2. Place the oil supply roll unit on a sheet to prevent oil adhesion as shown below.



### 3. Remove the cleaning pad.

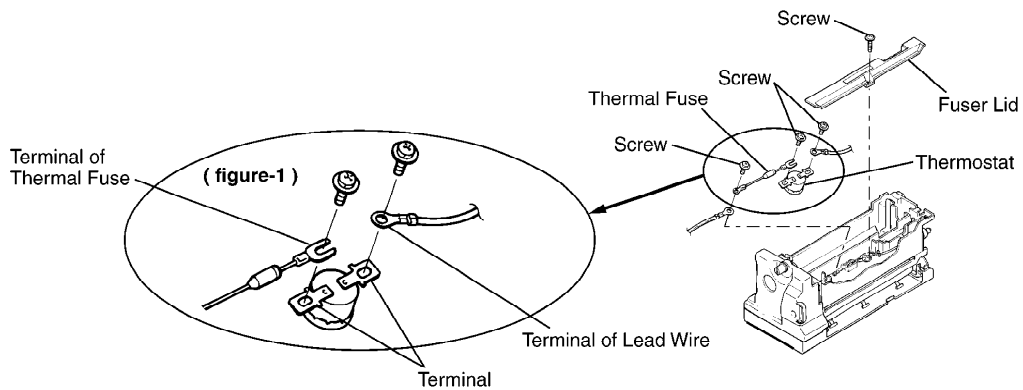


### 3.3. Thermal Fuse and Thermostat Removal

1. Remove the fuser lid ( 1 screw ).
2. Remove the thermal fuse ( 2 screws ), then thermostat ( 1 screw ).

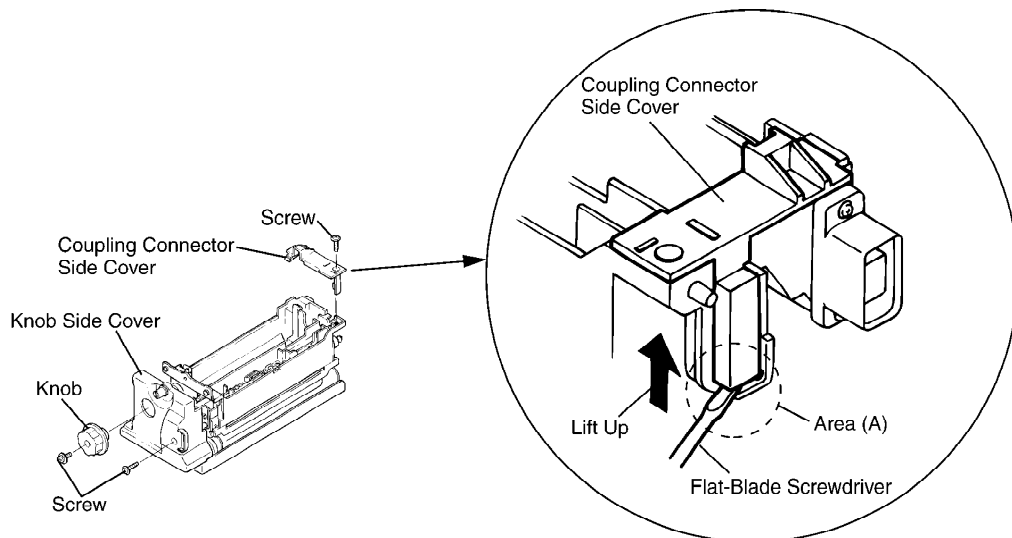
#### Caution:

When reinstalling the thermostat, both end terminals of the thermostat must be positioned under the terminals of thermal fuse and lead wire as shown in the figure-1, or the thermostat cannot properly measure the surface temperature of the heat roller because the distance between the surfaces of heat roller and thermostat changes.



### 3.4. Heat Lamp Removal

1. Remove the knob and knob side cover ( 2 screws ).
2. Remove the screw from the coupling connector side cover.
3. Separate the coupling connector side cover by lifting up area (A) using the flat-blade screwdriver as shown below.

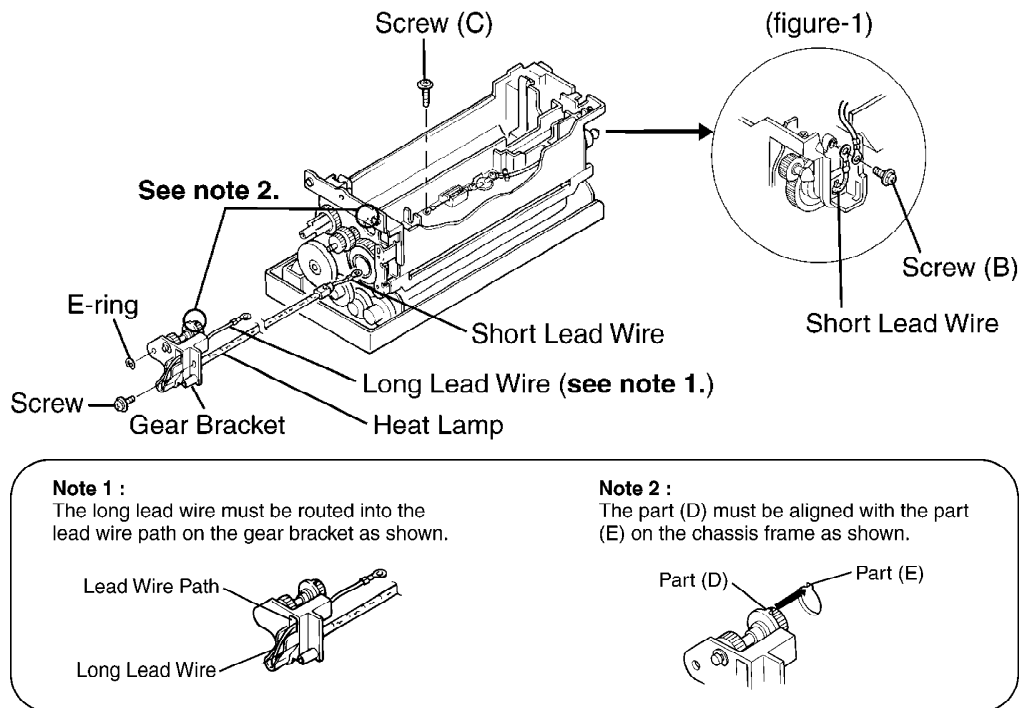


#### **Caution:**

**Do not touch the heat lamp with your fingers.**

1. It may be hot.
2. The oil and dirt from your fingers will contaminate the surface, which will result in damaging the heat lamp when it is turned on.
4. Remove the screw ( B ) from the short lead wire ( see the figure-1).
5. If the screw ( C ) with the washer is installed, remove it.
6. Remove the E-ring and screw.
7. Remove the heat lamp with the gear bracket.

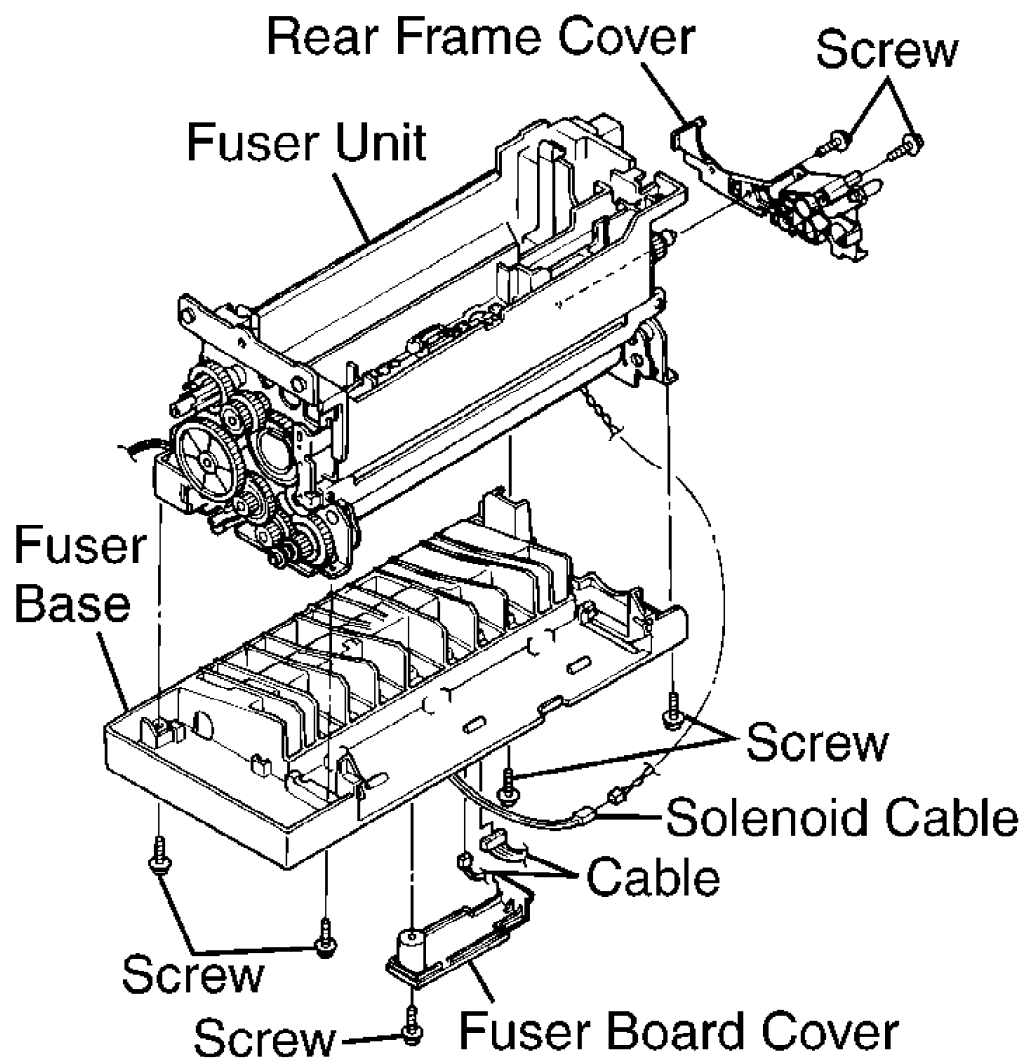
8. Separate the heat lamp from the gear bracket by extracting the lead wire from the lead wire path.



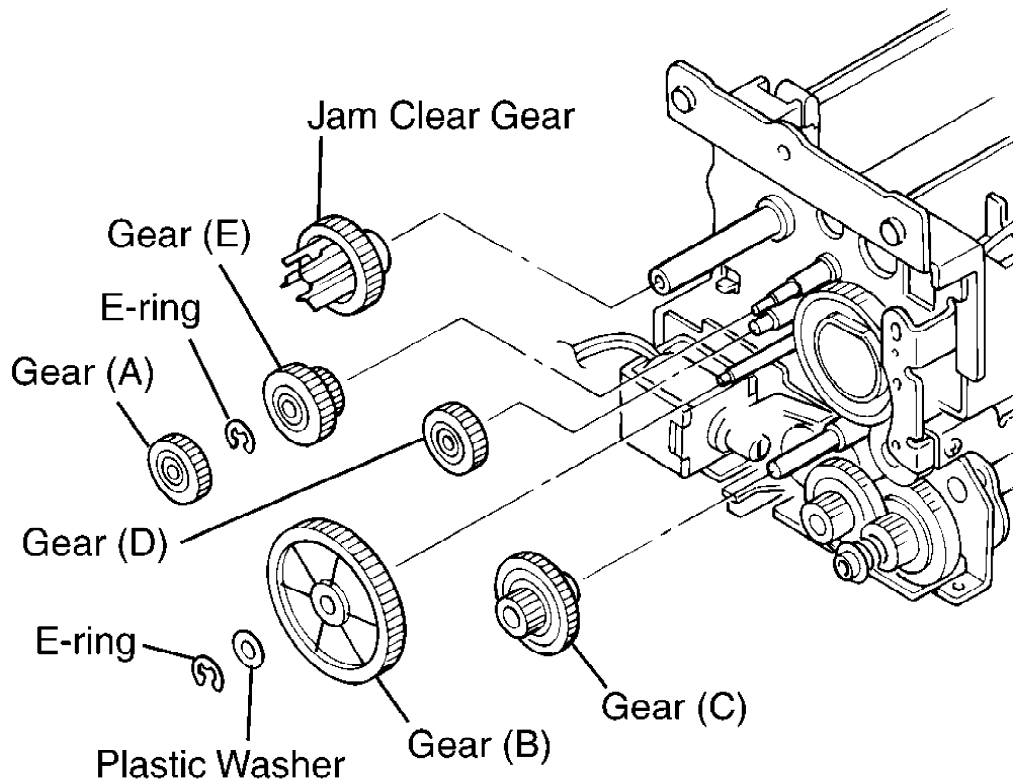
### 3.5. Heat Roller, Pressure Roller, Thermistor and related gears

Remove the oil supply roll unit, cleaning felt, knob, knob side cover and heat lamp from the fuser unit before proceeding. Please refer to the sections 3.2 [Removal of Oil Supply Roll Unit and Cleaning Pad](#) - section 3.4 [Heat Lamp Removal](#).

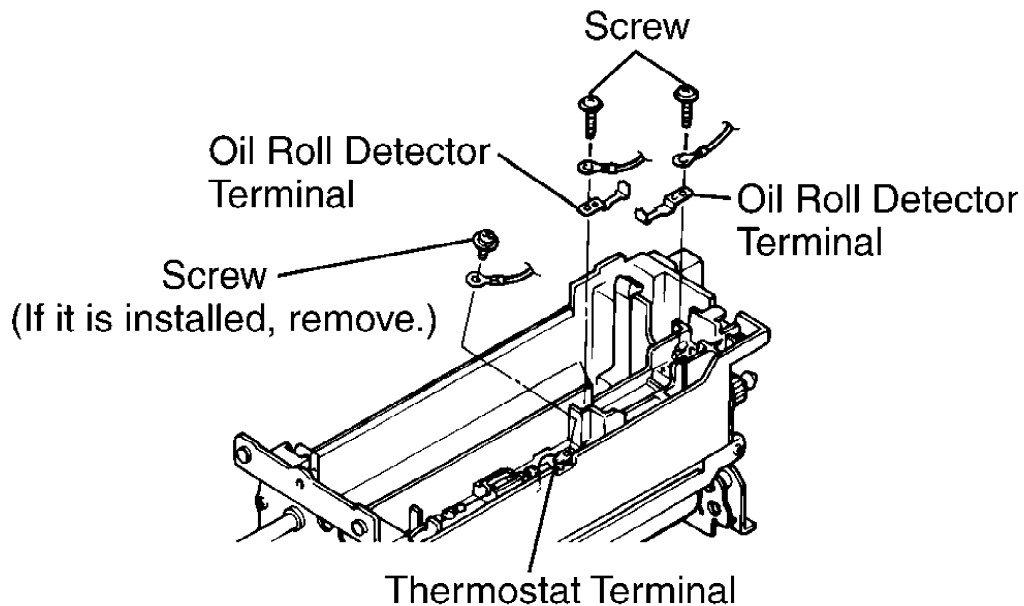
1. Remove the rear frame cover (2 screws).
2. Remove the fuser board cover (1 screw).
3. Disconnect all cables on the fuser board.
4. Remove the 4 screws, then separate the fuser unit from the fuser base while releasing the solenoid cable from the fuser base.



5. Remove the jam clear gear and gear (A).
6. Remove the E-ring and plastic washer, then 3 gears (B, C and D).
7. Remove the E-ring and gear ( E ).



8. Remove the screw from the thermostat terminal and 2 screws from the oil roll detector terminals.



9. Remove the 4 screws, then separate the upper frame from the fuser unit while releasing the thermostat and oil roll detector cables.

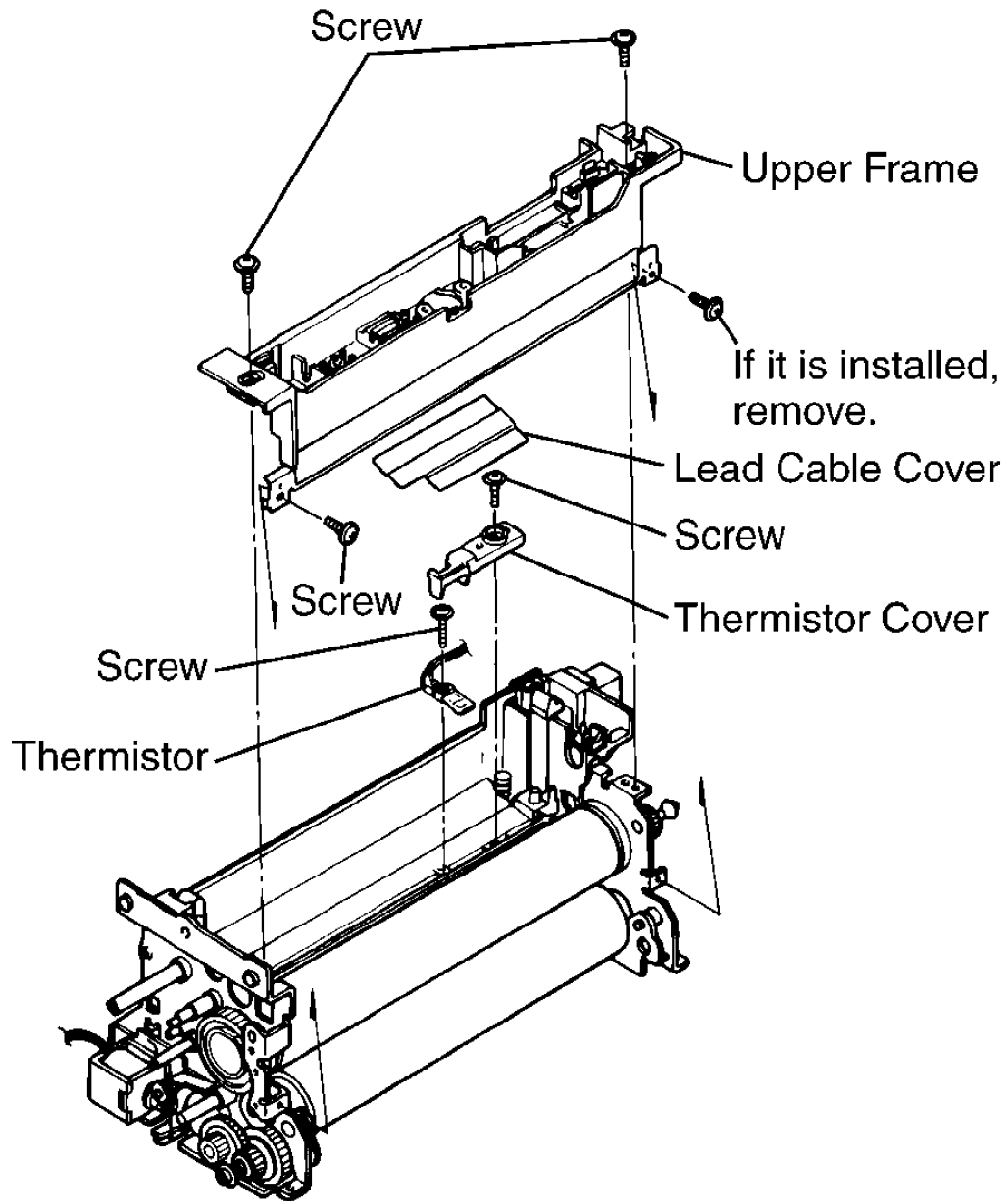
10. Remove the screw from the thermistor cover. Remove the screw



**and lead cable cover and disconnect the thermistor.**

**Note:**

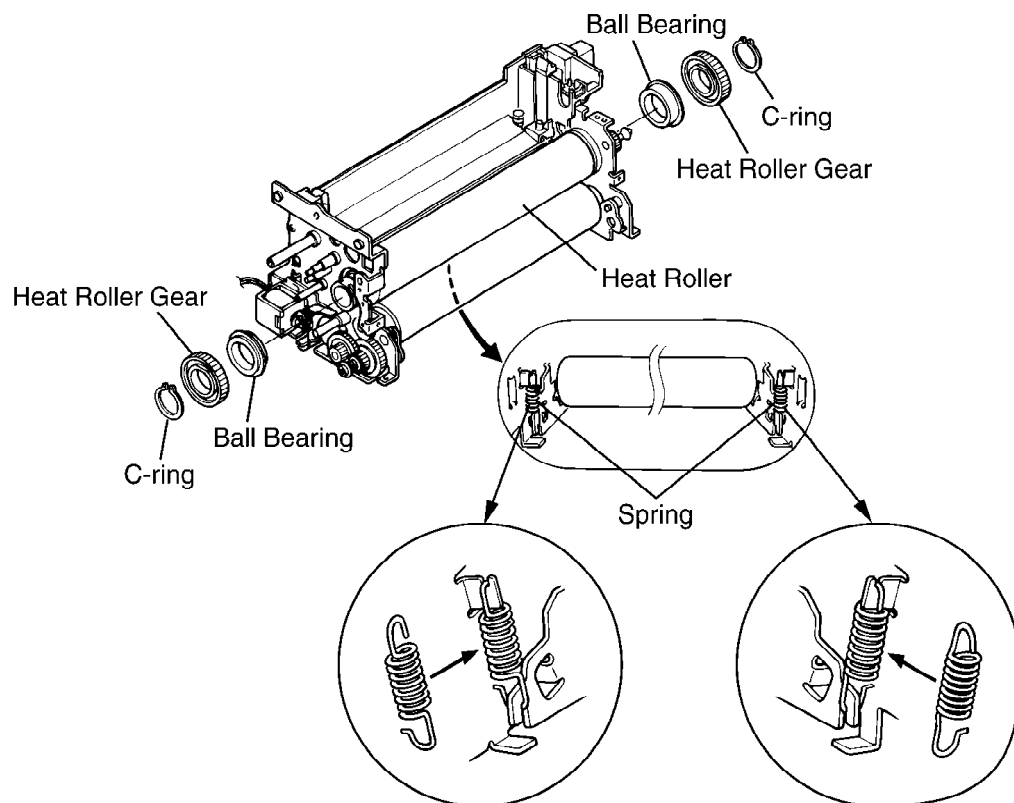
**When reinstalling the thermistor, the lead cable cover must be used the new one.**



**(11) Remove the 2 springs from the fuser unit.**

**(12) Remove the 2 C-rings, 2 heat roller gears and 2 ball bearings from the both ends of the heat roller.**

**(13) Remove the heat roller with care to prevent scratching and damage to the surface of the heat roller.**



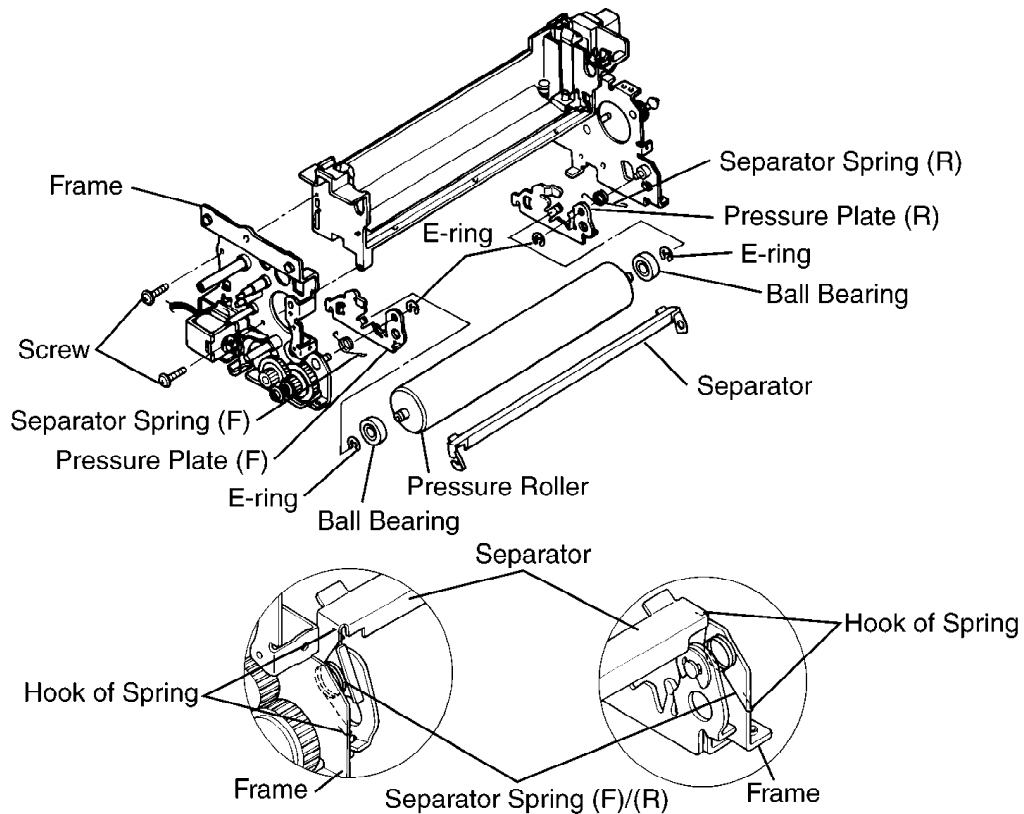
The spring must be hooked as shown above, or the hook of spring may be damaged.

(14) Remove the 2 screws, 2 E-rings, Pressure Plate (F), Pressure Plate (R), Separator Spring (F), Separator Spring (R) and Separator, then separate the frame from the fuser unit.

The pressure roller, 2 E-rings and 2 ball bearings can now be separated from the fuser unit.

**Note:**

When reinstalling the separator springs (F) and (R), hooks of these springs must be latched to the frame and separator as shown below.

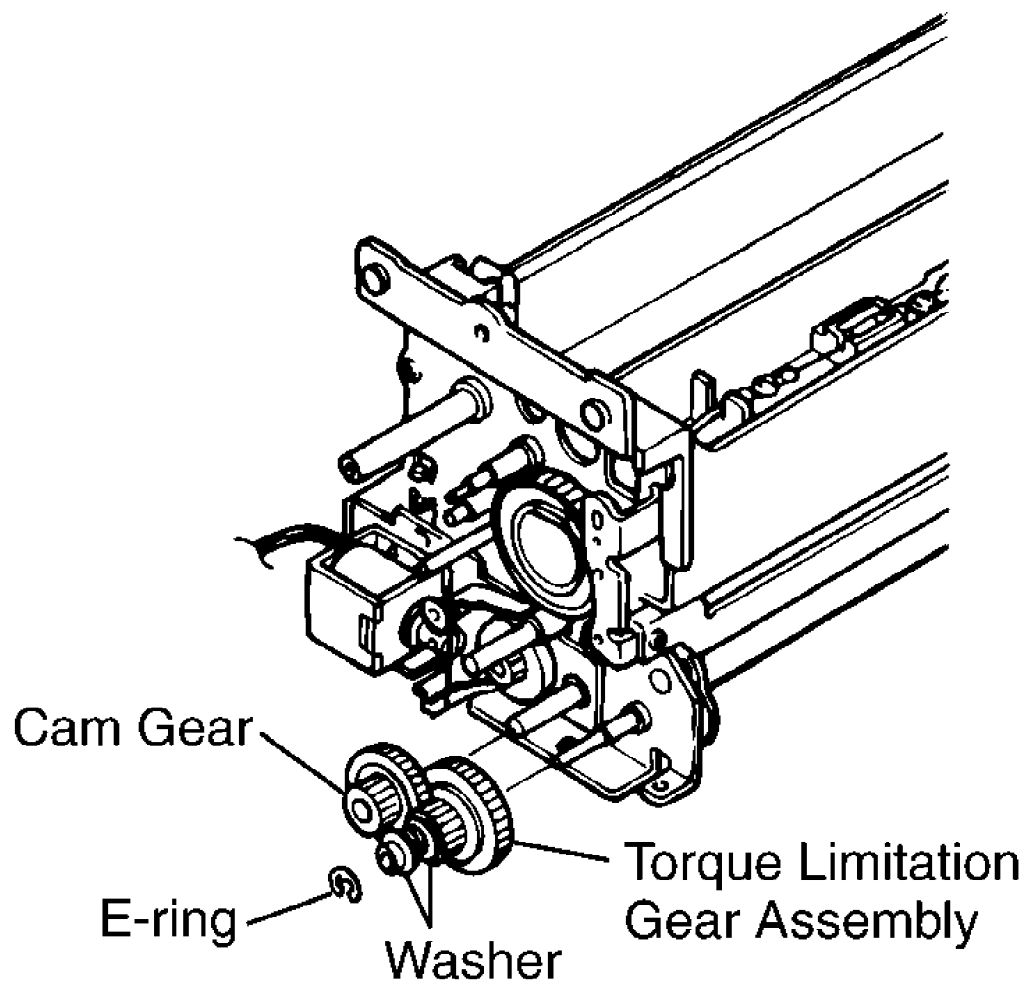


### 3.6. Torque Limitation Gear Assembly and Web Solenoid

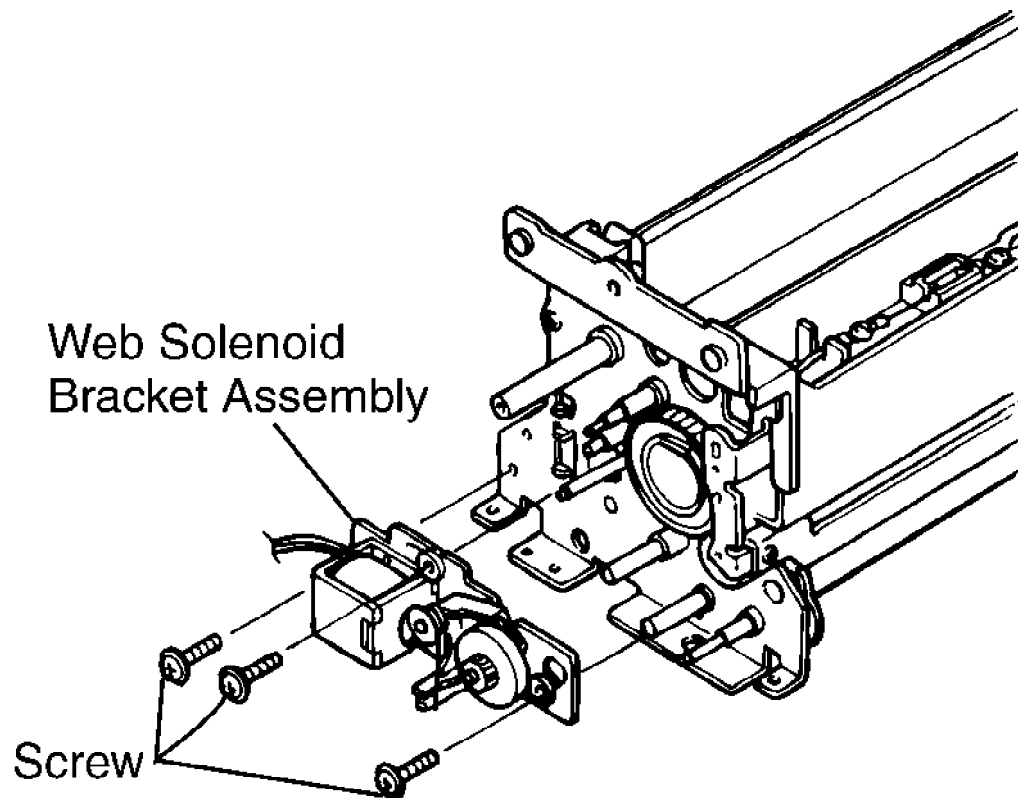
The fuser base, cam clear gear and gears (A-D) must be removed from the fuser unit before proceeding. Please refer to steps 1-7 of section 3.5 Heat Roller, Pressure Roller, Thermistor and related gears.

#### 1. Remove the E-ring.

Separate the torque limitation gear assembly and cam gear at the same time to prevent damage to the cam gear by the washer.

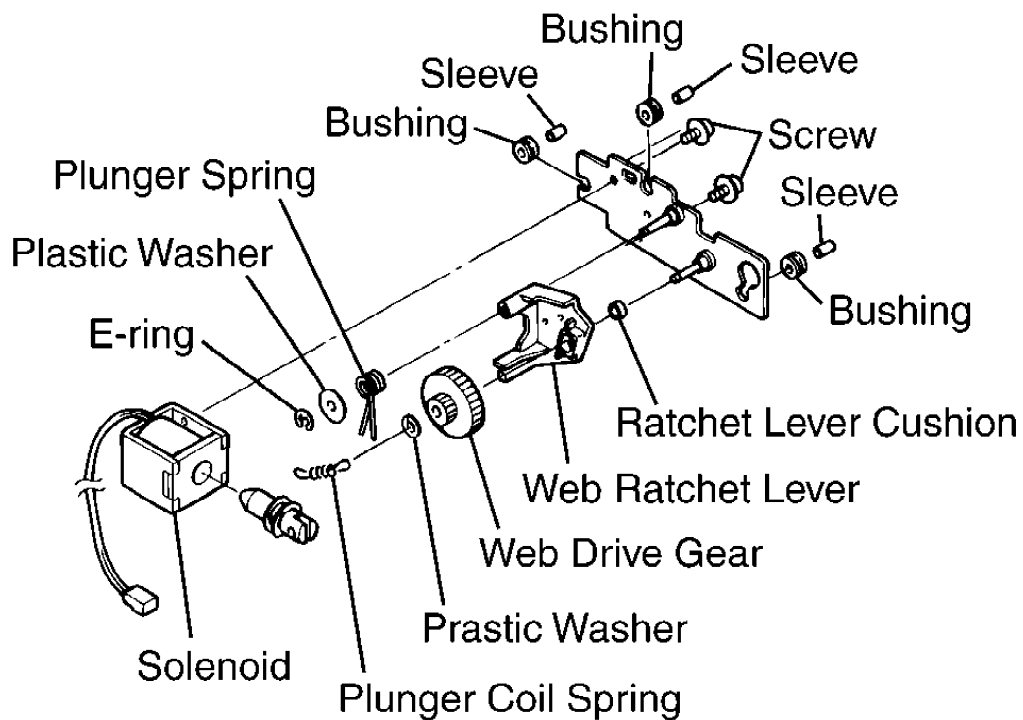


2. Remove the 3 screws.
3. Remove the web solenoid bracket assembly.

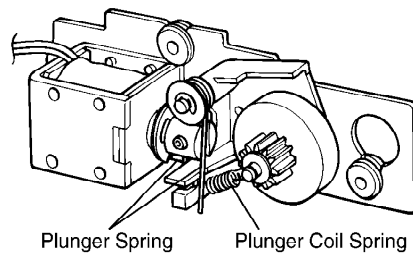


4. Release the plunger coil spring from the web drive gear shaft.
5. Remove the plastic washer and web drive gear.
6. Remove the E-ring and 2 screws.

The solenoid, plunger coil spring, plunger spring, plastic washer and web ratchet lever can be removed from the bracket.



Note :  
When reinstalling the solenoid, plunger coil spring, plunger spring, plastic washer and web ratchet lever on the bracket, these parts must be reassembled as shown.

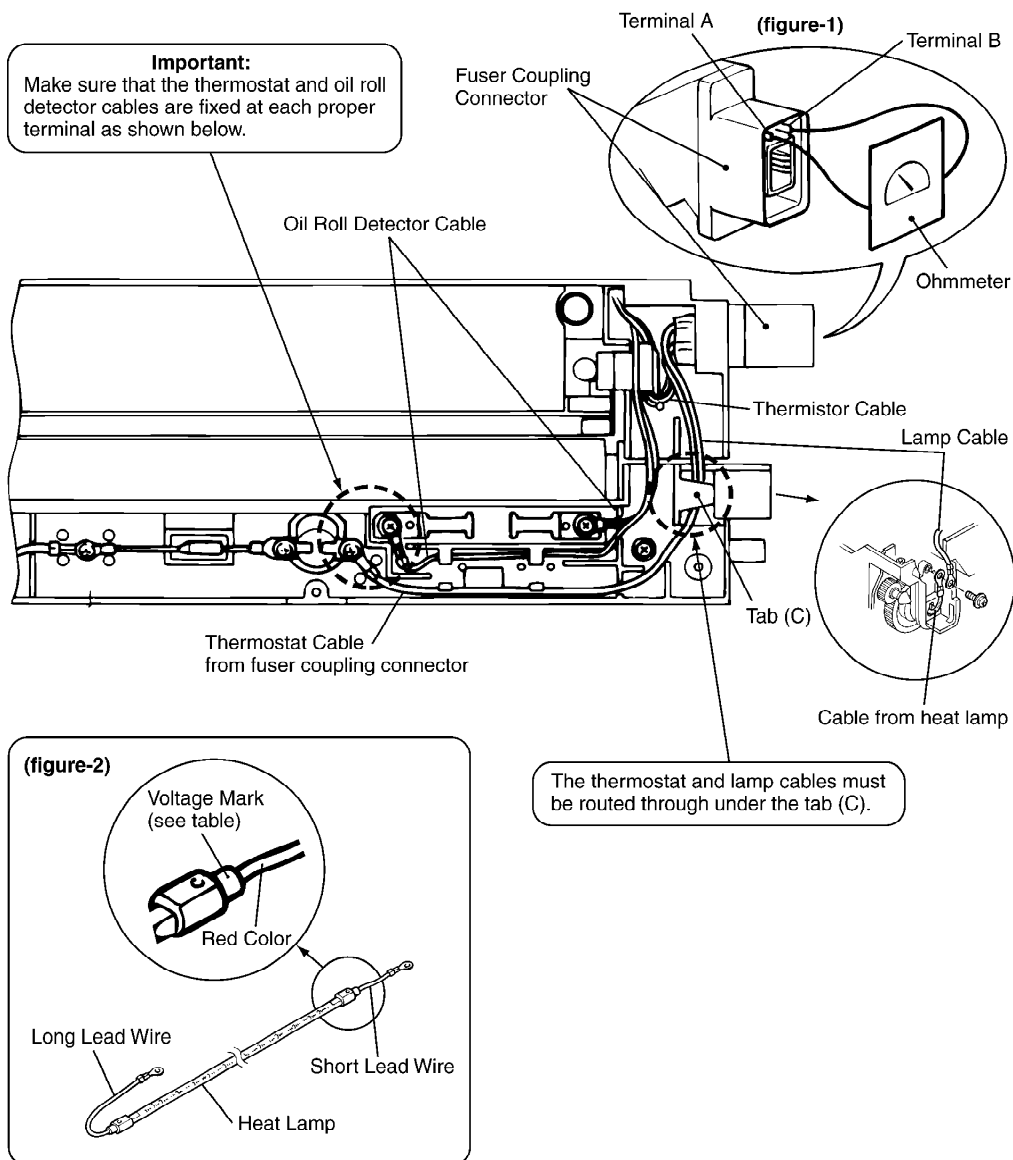


## 4. Rewiring

When rerouting the oil roll detector cables, thermistor cables, etc, these cables must be routed as shown below.

### Important Safety Notice:

1. After rerouting the cables, measure the resistance with an ohmmeter between the terminals A and B as shown in the figure-1. Make sure that the measurement is within the specified limits (1-4  $\Omega$  ). If not so, there is a possibility of improper wiring or wrong heat lamp. Recheck the cable wiring and heat lamp. The voltage mark is printed on the heat lamp. See the figure-2. To check the heat lamp, use the figure-2 and table.
2. After performing the above item 1, the Insulation Resistance Test must be done. See section 2 **Insulation Resistance Test**.



**Notice:**

When handling the heat lamp, see the caution in the section 3.4 **Heat Lamp Removal**.

## 5. Test Printing

After reassembling the fuser unit, perform the following section 5.1 **Print Quality Test** and section 5.2 **Web Roll Winding Test** to check the fuser operation.

### 5.1. Print Quality Test

Regarding to the operation steps for the test printing, refer to the service manual for KX-P8415. The following table indicates the page number, menu name, etc which describe the operation steps.

Perform the test printing and check the output. If the any problem is occurred, recheck the fuser unit.

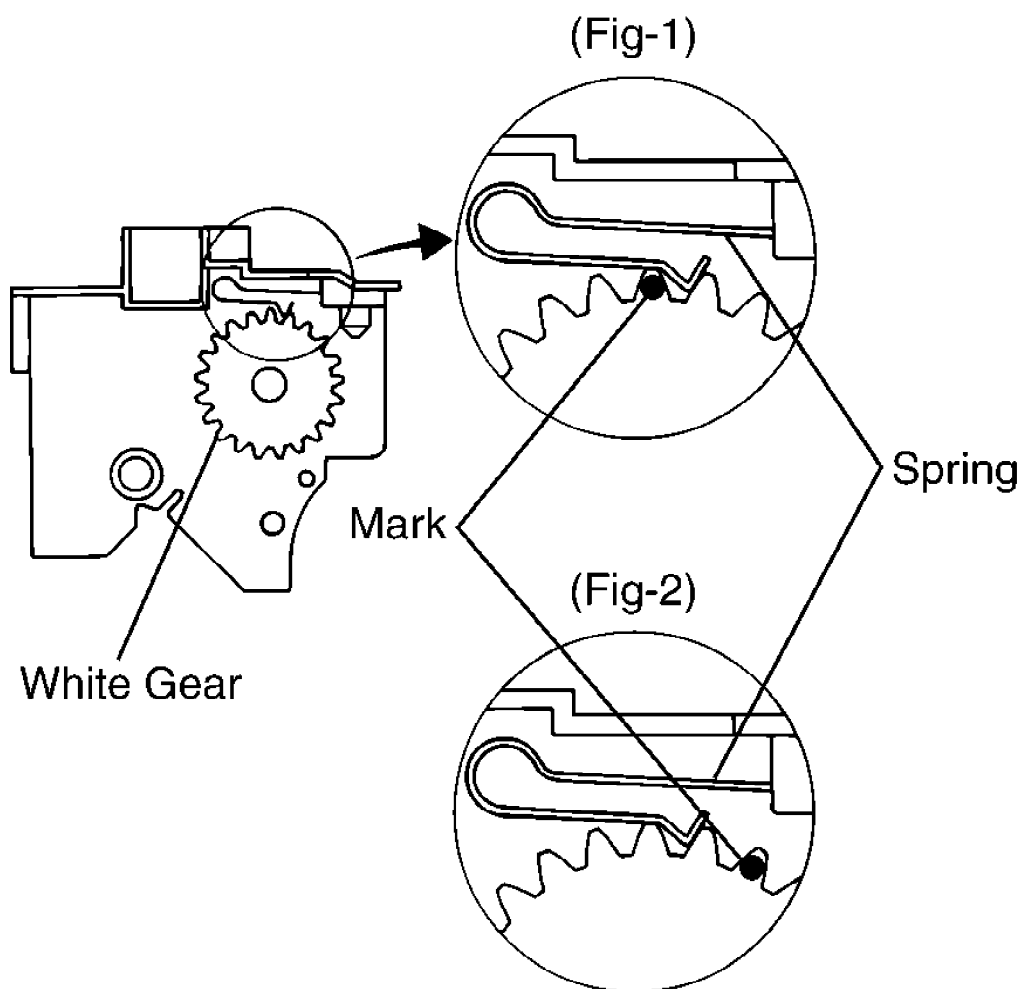
Service Manual	Section Number	Page Number	Item Menu
KX-P8415 Service Manual, Order No. KM69909610C0	3.1.1 & 3.1.2	32	Test Page item menu
		33	Configuration Page

## 5.2. Web Roll Winding Test

Perform the web roll winding test by the following steps, and make sure that the white gear rotates 2-10\*<sub>1</sub> cogs after printing 20 sheets. If not so, recheck the fuser unit.

1. Mark the cog of the white gear ( Fig-1 ).
2. Print 20 sheets (paper size: A4 or Letter).
3. Remove the fuser unit from the printer, and then web roll unit from the fuser unit.
4. Make sure that the white gear rotates 2-10\*<sub>1</sub> cogs (Fig-2).  
If not so, recheck the fuser unit.

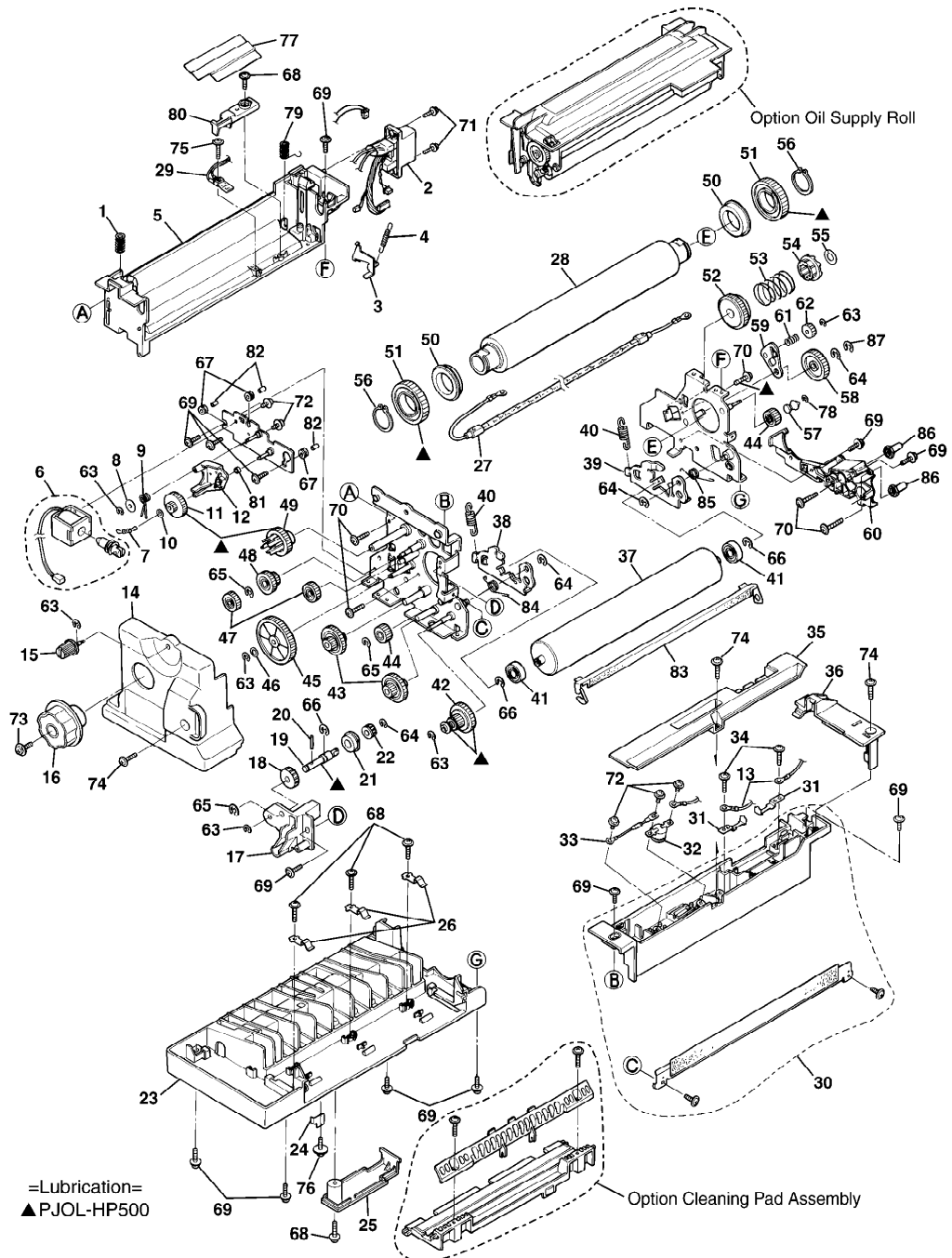
\*<sub>1</sub> changes depending on the remaining size of web roll.








## MEMO

### 6. Replacement Parts List with Lubrication Guide



Ref. No.	Part No.	Part Name & Description	Remarks
<a href="#">1</a>	PJDSA0039Z	Spring	
<a href="#">2</a>	PJJRZCP001Z	Fuser Coupling Connector	
<a href="#">3</a>	PJMDA0167Y	Release Lever	
<a href="#">4</a>	PJDSA0098Z	Spring	
<a href="#">5</a>	PJYKPFUSUCU	Oil Tray Assembly	
<a href="#">6</a>	PJDPA0006Z	Solenoid	
<a href="#">7</a>	PJDSA0092Z	Plunger Coil Spring	
<a href="#">8</a>	PJNW413Z	Plastic Washer	
<a href="#">9</a>	PJDSA0093Z	Plunger Spring	
<a href="#">10</a>	PJNW316Z	Plastic Washer	
<a href="#">11</a>	PJDGA0108X	Web Drive Gear	
<a href="#">12</a>	PJHRA0375Y	Web Ratchet Lever	
<a href="#">13</a>	PJJRG11001Z	Web Roll Detector Cable	
<a href="#">14</a>	PJYK1PFSU5M	Knob Side Cover Assembly	
<a href="#">15</a>	PJNEA0038Z-1	Lock Screw	
<a href="#">16</a>	PJKH5004Z-1	Knob	
<a href="#">17</a>	PJHRA0236Y	Gear Bracket	
<a href="#">18</a>	PJDG50364Z	Gear	
<a href="#">19</a>	PJDFA0143Y	Web Drive Shaft	
<a href="#">20</a>	PJHE6035Z	Parallel Pin	
<a href="#">21</a>	PJDJA0033Y	Web Drive Bearing	
<a href="#">22</a>	PJDGA0120Z	Web Idle Gear 2	
<a href="#">23</a>	PJYK1PFSUCU	Fuser Base Plate Assembly	
<a href="#">24</a>	PJHM537Z	Stopper Plate	
<a href="#">25</a>	PJKEA0042Z	Fuser Board Cover	
<a href="#">26</a>	PJUS221Z	Cleaning Bracket Spring	
<a href="#">27</a>	PJAH06003Y	Heat Lamp (Halogen Lamp)	
<a href="#">28</a>	PJDRA0042Z	Heat Roller	
<a href="#">29</a>	PJRTS9Y	Thermistor	
<a href="#">30</a>	PJYK2PFSUBM	Upper Frame Assembly	
<a href="#">31</a>	PJMDA0139Z	First Fuse Terminal	
<a href="#">32</a>	PJSE180001Z	Thermostat	
<a href="#">33</a>	PJXE10R16901	Thermal Fuse	
<a href="#">34</a>	PJNEA0068Z	Lock Screw	
<a href="#">35</a>	PJYK4PFSU5M	Top Cover (1)	
<a href="#">36</a>	PJKEA0039Y	Coupling Connector Side Cover	
<a href="#">37</a>	PJDRA0055Z	Pressure Roller	
<a href="#">38</a>	PJMDA0204Z	Pressure Plate (F)	
<a href="#">39</a>	PJMDA0205Z	Pressure Plate (R)	
<a href="#">40</a>	PJDSA0130Z	Spring	
<a href="#">41</a>	PJDJA0030Z	Ball Bearing	
<a href="#">42</a>	PJZGPFSU5M	Torque Limitation Gear Assembly	
<a href="#">43</a>	PJDGA0093Y	Cam Gear 2	
<a href="#">44</a>	PJDG50378Z	Drive Gear E	
<a href="#">45</a>	PJDGA0107Y	Web Drive Gear 2	
<a href="#">46</a>	PJNW522Z	Polyslider	
<a href="#">47</a>	PJDG50395Z	Gear Z18	
<a href="#">48</a>	PJDGA0106Z	Web Drive Gear 1	
<a href="#">49</a>	PJDG5251Z	Jam Clear Gear	
<a href="#">50</a>	PJDB17Y	Ball Bearing	
<a href="#">51</a>	PJDG50381Z	Heat Roller Gear	
<a href="#">52</a>	PJDG50387Z	Drive Gear G	
<a href="#">53</a>	PJDS5243Z	Coil Spring	

Ref. No.	Part No.	Part Name & Description	Remarks
<a href="#">54</a>	PJHR9901Z	Drive Connector	
<a href="#">55</a>	PJNW912Z	Polyslider	
<a href="#">56</a>	PJHE6052Z	C-ring	
<a href="#">57</a>	PJHRA0235Y	Gear Connector	
<a href="#">58</a>	PJDG50127Z	Intermediate Gear	
<a href="#">59</a>	PJZHPFSU5M	Gear Pivot Plate Assembly	
<a href="#">60</a>	PJKEA0087Z	Rear Frame Cover	

Ref. No.	Part No.	Part Name & Description	Remarks
<a href="#">61</a>	PJDSA0145Z	Friction Gear Spring	
<a href="#">62</a>	PJDGA0099X	Web Idle Gear	
<a href="#">63</a>	XUC3VW-V	E-ring	
<a href="#">64</a>	XUC4VW-V	E-ring	
<a href="#">65</a>	XUC5VW-V	E-ring	
<a href="#">66</a>	XUC6VW-V	E-ring	
<a href="#">67</a>	JDBG0021Z	Bushing	
<a href="#">68</a>	XTW3+8S	Screw 3 x 8	
<a href="#">69</a>	XTW3+8L	Screw 3 x 8	
<a href="#">70</a>	XTW3+16S	Screw 3 x 16	
<a href="#">71</a>	XTW26+U10S	Screw 26 x 10	
<a href="#">72</a>	XYN3+F6	Screw 3 x 6	
<a href="#">73</a>	XYN4+F8	Screw 4 x 8	
<a href="#">74</a>	XTW3+10S	Screw 3 x 10	
<a href="#">75</a>	XTW3+12S	Screw 3 x 12	
<a href="#">76</a>	PJHE5065Z	Screw	
<a href="#">77</a>	PJHRA0548Z	Lead Cable Cover	
<a href="#">78</a>	XUC2VW-V	E-ring	
<a href="#">79</a>	PJDSA0138Z	Spring	
<a href="#">80</a>	PJHRA0733Z	Thermistor Cover	
<a href="#">81</a>	PJHGA0074Z	Ratchet Lever Cushion	
<a href="#">82</a>	PJNEA0044Z	Sleeve	
<a href="#">83</a>	PJMDA0208Z	Separator	
<a href="#">84</a>	PJDSA0129Z	Separator Spring (F)	
<a href="#">85</a>	PJDSA0137Z	Separator Spring (R)	
<a href="#">86</a>	PJHRA0676Z	Pin	
<a href="#">87</a>	XUC4VW-V	E-ring	

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